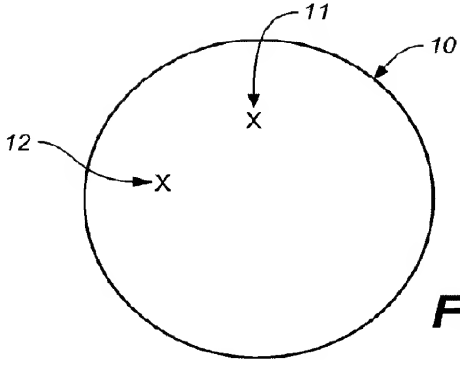


FIG. 1

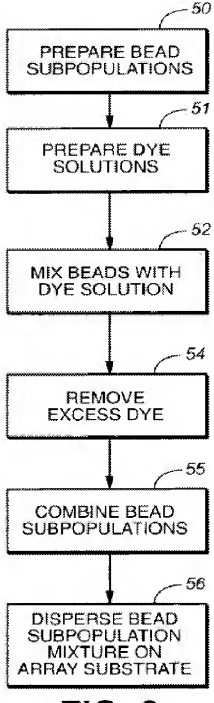

50
PREPARE BEAD SUBPOPULATIONS
51
PREPARE DYE SOLUTIONS
52
MIX BEADS WITH DYE SOLUTION
54
REMOVE EXCESS DYE
55
COMBINE BEAD SUBPOPULATIONS
56
DISPERSE BEAD SUBPOPULATION MIXTURE ON ARRAY SUBSTRATE

FIG. 2

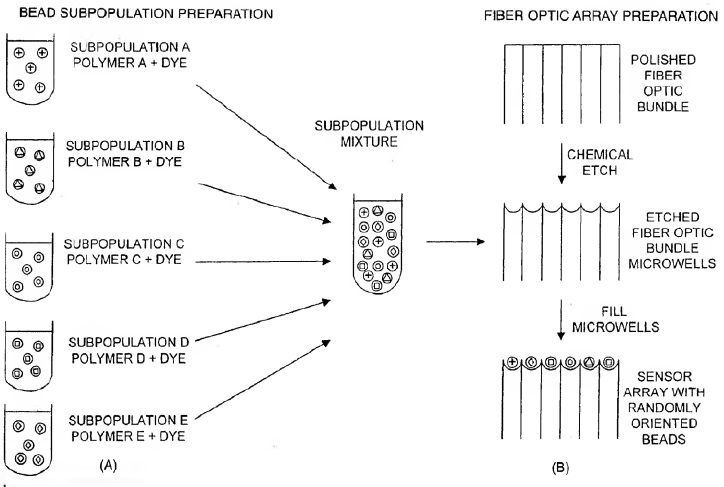


FIG._3

REPLACEMENT SHEET

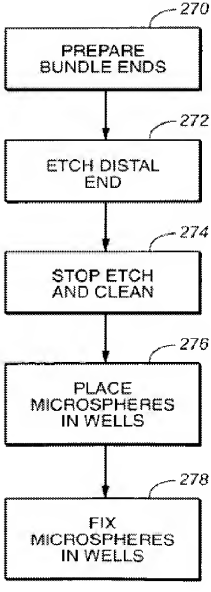

270
PREPARE BUNDLE ENDS
272
ETCH DISTAL END
274
STOP ETCH AND CLEAN
276
PLACE MICROSPHERES IN WELLS
278
FIX MICROSPHERES IN WELLS

FIG. 4

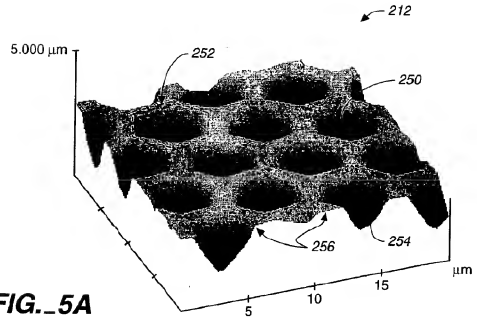

212
5.000 µm
252
250
256
254
µm
5
10
15

FIG._5A

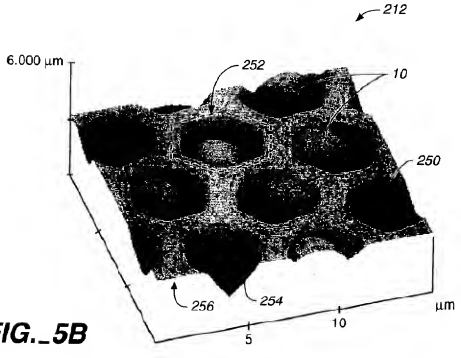

212
6.000 µm
252
10
250
256
254
µm
5
10

FIG._5B

FIG._6A

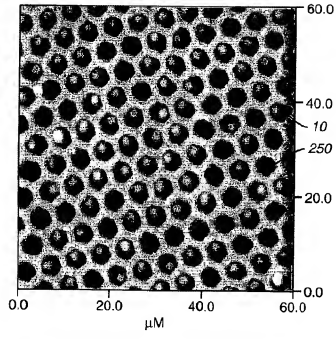
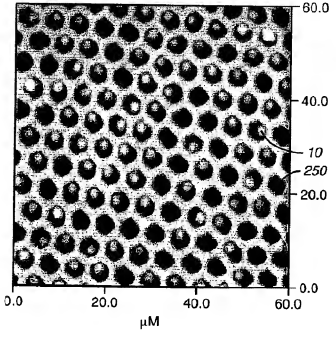

60.0
40.0
10
250
20.0
0.0
0.0
20.0
40.0
60.0
μM

FIG._6B


60.0
40.0
10
250
20.0
0.0
0.0
20.0
40.0
60.0
μM

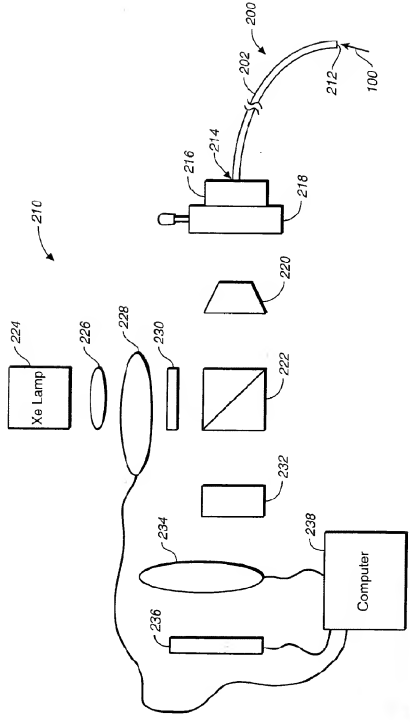

200
202
212
100
216
214
218
210
220
224
Xe Lamp
226
228
230
222
232
234
238
Computer
236

FIG._7

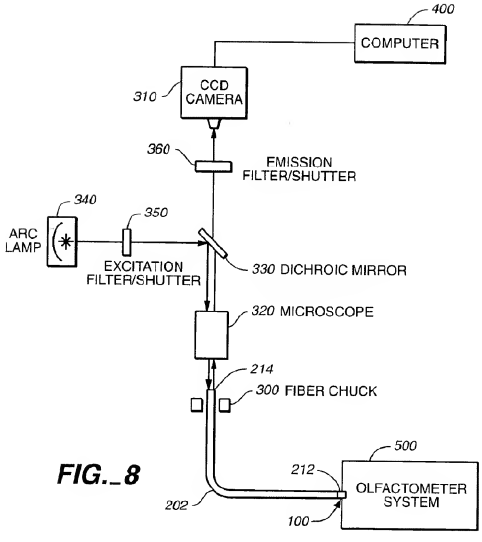

400
COMPUTER
310
CCD CAMERA
360
FMISSION FILTER/SHUTTER
340
350
ARC LAMP
EXCITATION FILTER/SHUTTER
330 DICHROIC MIRROR
320 MICROSCOPE
214
300 FIBER CHUCK
500
212
OLFACTOMETER SYSTEM
202
100

FIG._8

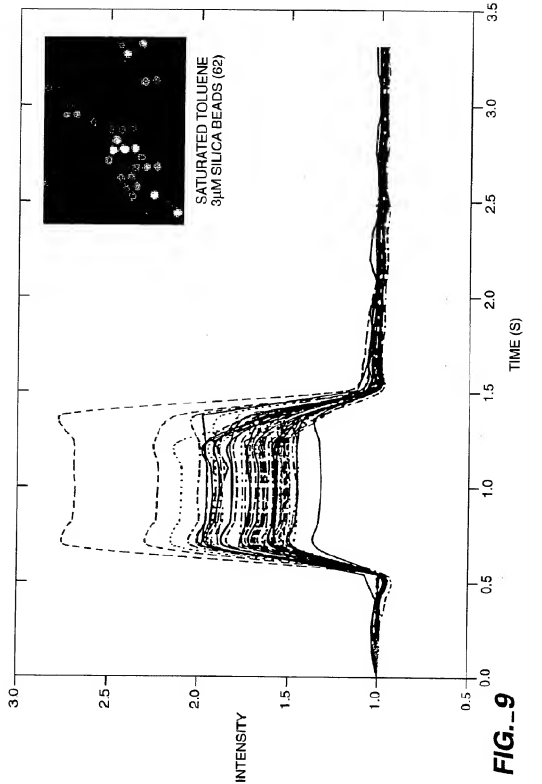

SATURATED TOLUENE
3µM SILICA BEADS (62)
INTENSITY
TIME (S)
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5

FIG._9

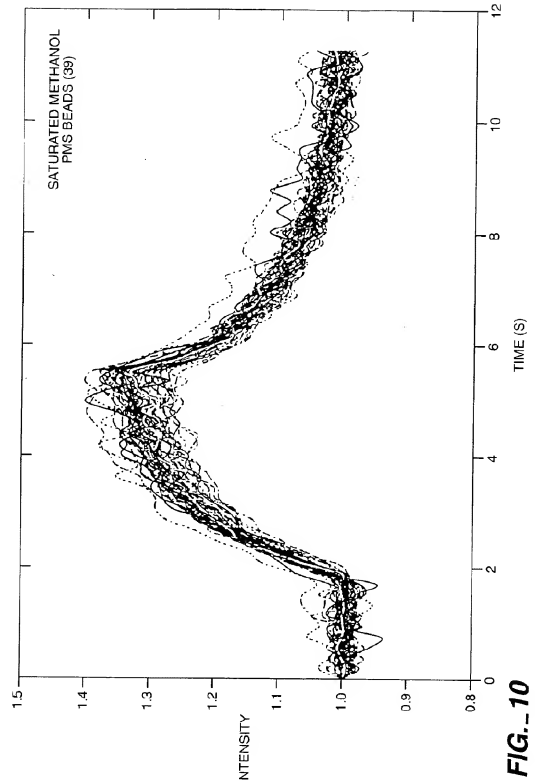

SATURATED METHANOL
PMS BEADS (39)
INTENSITY
TIME (S)
1.5
1.4
1.3
1.2
1.1
1.0
0.9
0.8
0
2
4
6
8
10
12

FIG._10

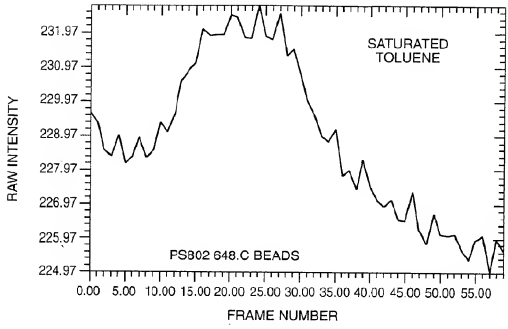


FIG._11A

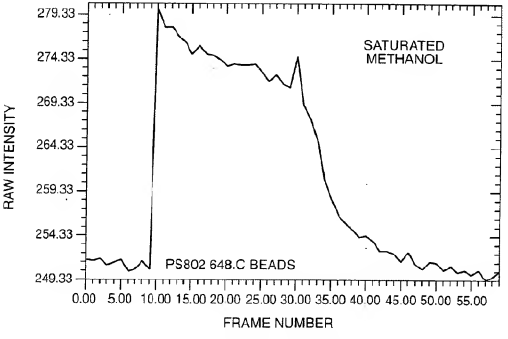


FIG._11B

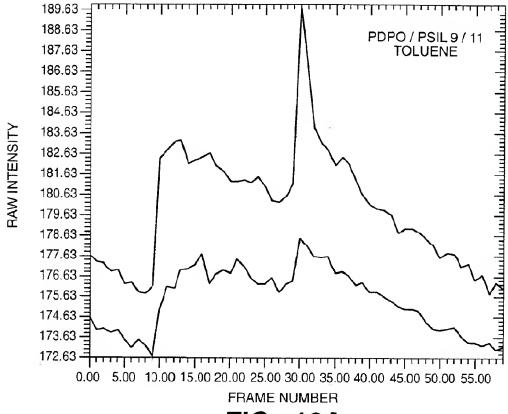


FIG._12A

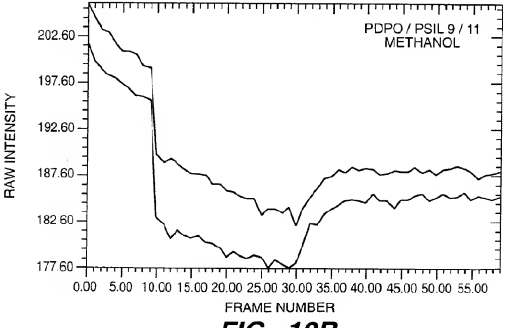


FIG._12B

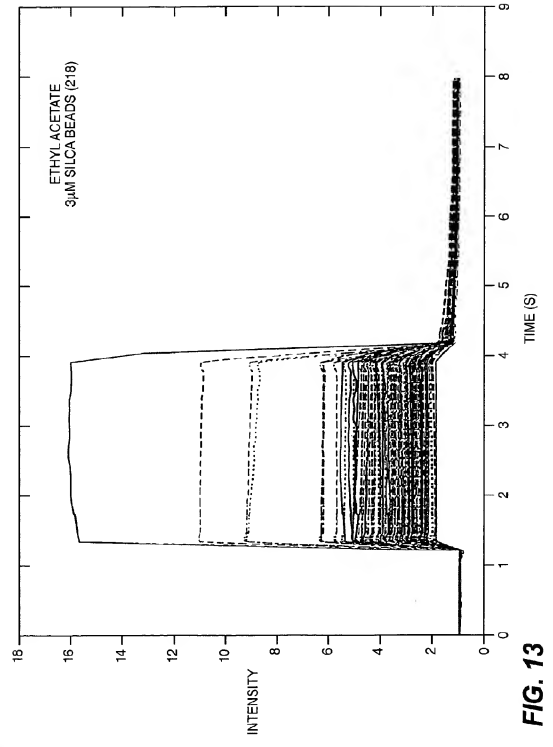

ETHYL ACETATE
3µM SILCA BEADS (218)
INTENSITY
TIME (S)
0
2
4
6
8
10
12
14
16
18
0
1
2
3
4
5
6
7
8
9

FIG. 13

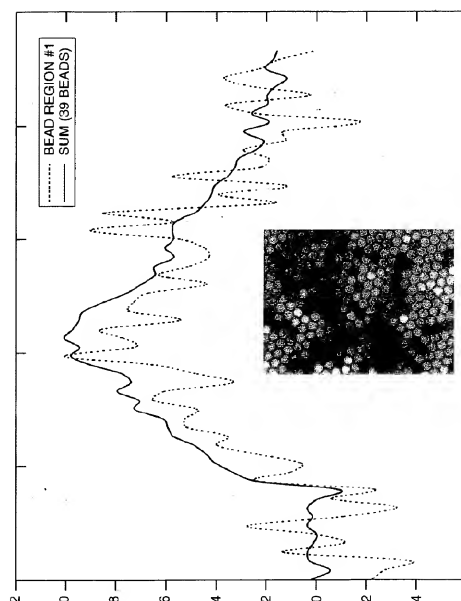

BEAD REGION #1
SUM (39 BEADS)
NORMALIZED INTENSITY
TIME (S)
1.2
1.0
0.8
0.6
0.4
0.2
0.0
-0.2
-0.4
-0.6
0
2
4
6
8
10

FIG. 14

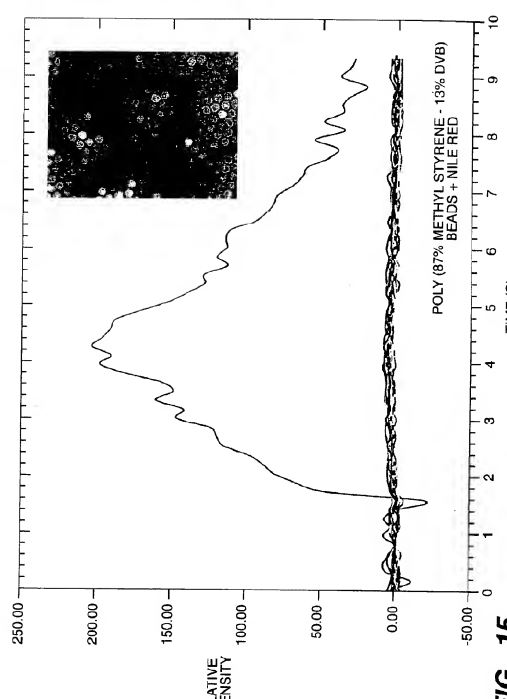

250.00
200.00
150.00
100.00
50.00
0.00
-50.00
RELATIVE INTENSITY
0
1
2
3
4
5
6
7
8
9
10
TIME (S)
POLY (87% METHYL STYRENE - 13% DVB) BEADS + NILE RED

FIG._15

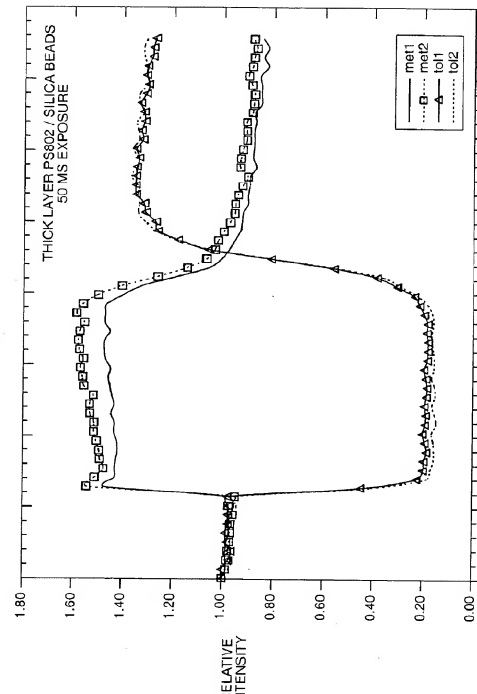

THICK LAYER PS802 / SILICA BEADS
50 MS EXPOSURE
RELATIVE INTENSITY
TIME (S)
met1
met2
tol1
tol2
0.00
0.20
0.40
0.60
0.80
1.00
1.20
1.40
1.60
1.80
0
1
2
3
4
5
6
7
8

FIG._16

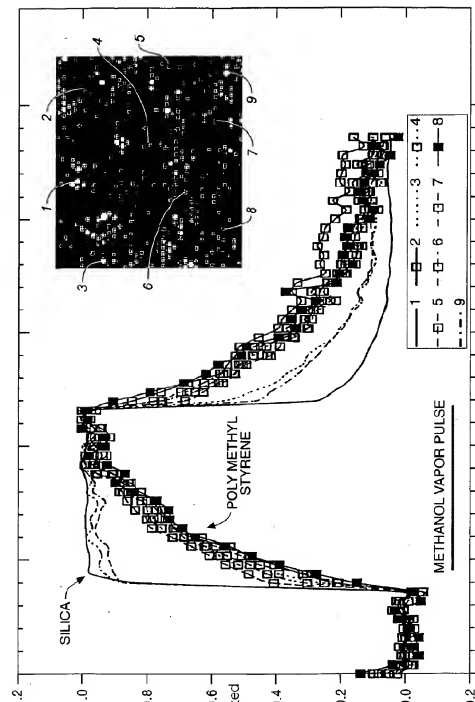

Standardized Intensity
1.2
1.0
0.8
0.6
0.4
0.2
0.0
-0.2
0
2
4
6
8
10
TIME (S)
SILICA
POLY METHYL STYRENE
METHANOL VAPOR PULSE
1
2
3
4
5
6
7
8
9

FIG. 17

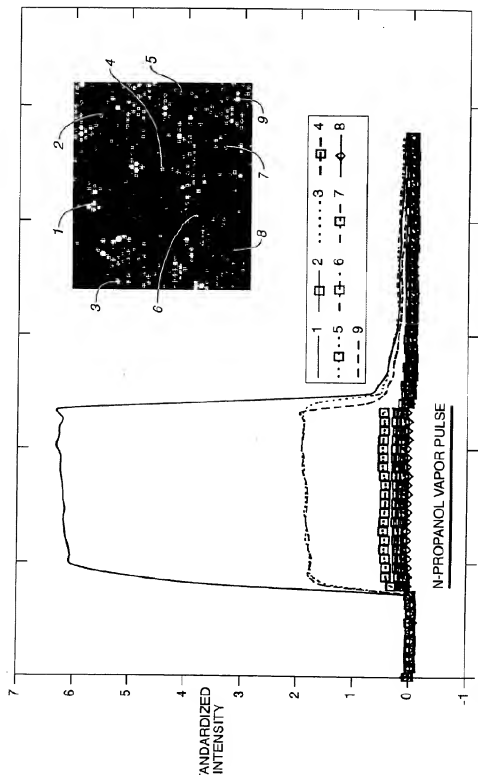

STANDARDIZED INTENSITY
TIME (S)
N-PROPANOL VAPOR PULSE
1
2
3
4
5
6
7
8
9

FIG._18

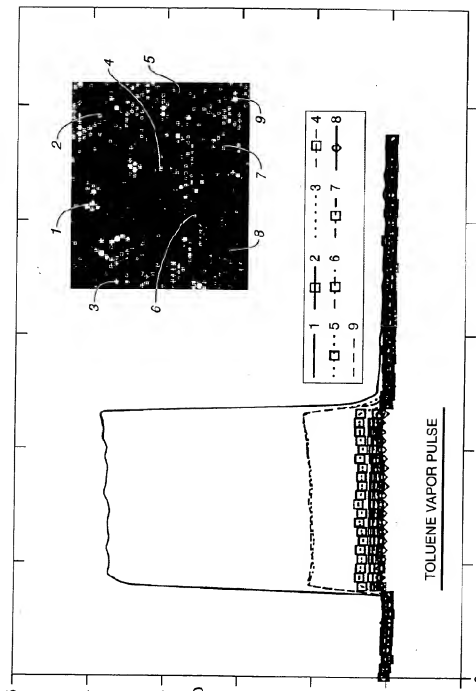
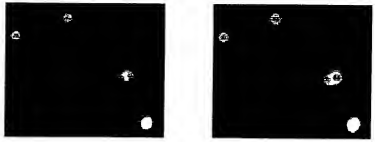
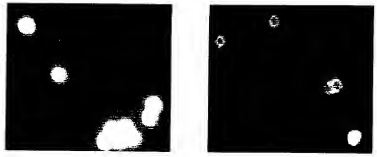

STANDARDIZED INTENSITY
TIME (S)
TOLUENE VAPOR PULSE
1
2
3
4
5
6
7
8
9

FIG._19

PS802 648.C



POLY METHYL STYRENE /
2% DIVINYL BENZENE



POLY METHYL STYRENE

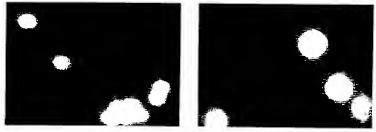


FIG._20

1) β-glo (segment of human β-globin)[26]
TCA ACT TCA TCC ACG TTC ACC (SEQ ID NO: 12)
2) IFNG (interferon gamma 1)[29]
IFNG TGG GTT CTC TTG GCT GTT ACT (SEQ ID NO: 13)
3) IL2 (interleukin-2)[25]
TA CAA GAA TCC CAA ACT CAC CAG (SEQ ID NO: 14)
4) IL4 (interleukin-4)[25]
CC AAC TGC TTC CCC CTC TGT (SEQ ID NO: 15)
5) IL6 (interleukin-6)[25]
GT TGG GTC AGG GGT GGT TAT T (SEQ ID NO: 16)
6) K-ras WT[27]
GGA GCT GGT GGC GTA (SEQ ID NO: 17)
7) H-ras WT[27]
CCG GCG GTG T (SEQ ID NO: 18)
8) CFTR (cystic fibrosis exon 11)[13]
CAT TAT ACT TGT AGA G (SEQ ID NO: 19)
9) R553X (cystic fibrosis exon 10)[13]
TGT AGA ATT ATC TTC (SEQ ID NO: 20)
10) PAN132[16] (human peripheral lymphocyte)
CCT CTA TAC TTT AAC GTC AAG (SEQ ID NO: 21)
11) Scherm-2[16]
AAG TTT AAC CTA TAC CCT GTC (SEQ ID NO: 22)
12) Hakala-1[20]
CCT ATG ATG AAT ATA G (SEQ ID NO: 23)
13) Hakala-2[26]
AAT ATG ATA ATG GCC T (SEQ ID NO: 24)
14) complement to probe 1
TG AAC GTG GAT GAA GTT G (SEQ ID NO: 6)
15) complement to probe 2
AG TAA CAG CCA AGA GAA CCC AAA (SEQ ID NO: 7)
16) complement to probe 3
CT GGT GAG TTT GGG ATT CTT GTA (SEQ ID NO: 8)
17) complement to probe 4
AC AGA GGG GGA AGC AGT TGG (SEQ ID NO: 9)
18) complement to probe 5
AA TAA CCA CCC CTG ACC CAA C (SEQ ID NO: 10)
19) complement to probe 6
TAC GCC ACC AGC TCC (SEQ ID NO: 25)
20) complement to probe 7
ACA CCG CCG G (SEQ ID NO: 26)
21) complement to probe 8
CTC TAC AAG TAT AAT G (SEQ ID NO: 27)
22) complement to probe 9
GAA GAT GTT AAA GTA TAG AGG (SEQ ID NO: 28)
23) complement to probe 10
CTA GAC GTT AAA GTA TAG AGG (SEQ ID NO: 29)
24) complement to probe 12
CTA TAT TCA TCA TAG G (SEQ ID NO: 30)
25) complement to probe 13
AGG CCA TTA TCA TAT T (SEQ ID NO: 31)

REPLACEMENT SHEET

FIG. 21

Probe	[Cy5]	[Tamra]	[Eu-dye]	Correct Target Identification
HWt	1		0.1	93%
Bglo	0.5		0.05	88%
KWt	0.5		0.005	91%
IL6	0.1		0.1	96%
IL4	0.1		0.005	95%
IFNG		0.4	0.005	95%
IL2		0.04	0.05	98%

REPLACEMENT SHEET

FIG. 22

Target Identity	No. of beads in analysis section	[Cy5]	[Tamra]	[Eu-dye]	Correct Target Identification
2	19		3	0.5	89%
4	15	0.01	0.1	0.1	87%
5	13		0.1	0.1	100%
9	5	0.01			100%
10	14			0.001	86%
11	12		0.1		92%
15	8	0.01	0.1		100%
16	24	0.1			92%
21	21	0.1	3		95%
24	16	0.3	3		94%

FIG. 23

Sequences	Number of microspheres	Mean background ± s.d.	Fluorescence after hybridization	Signal
Complementary target	10	997.01 ± 4.62	1036.94	39.93
	10	1003.46 ± 6.05	1035.83	32.37
	10	957.44 ± 5.59	985.25	27.81
	100	977.88 ± 3.21	1010.74	32.86
Poly A	10	1213.79 ± 6.33	1221.61	(7.81)
	10	1185.25 ± 9.39	1194.74	(9.49)
	10	1190.20 ± 4.85	1198.35	(8.15)
	100	1190.67 ± 4.05	1199.81	(9.14)
IL2	10	1090.58 ± 4.97	1096.11	(5.53)
	10	1120.62 ± 3.09	1113.88	(-6.74)
	10	1101.82 ± 5.51	1091.28	(-10.55)
	100	1104.36 ± 1.40	1103.06	(-1.30)

REPLACEMENT SHEET

FIG. 24

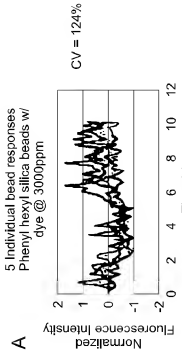

A
5 Individual bead responses
Phenyl hexyl silica beads w/
dye @ 3000ppm
CV = 124%
Normalized
Fluorescence Intensity
2
1
0
-1
-2
0
2
4
6
8
10
12
Time (s)

FIG. 25

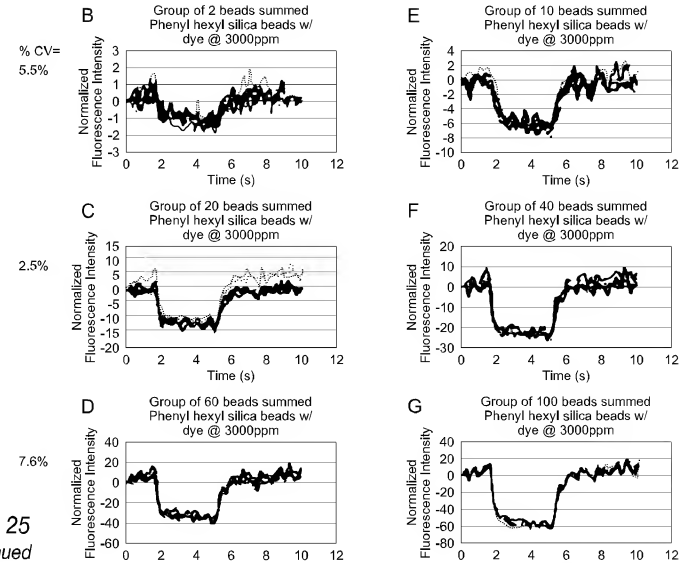


FIG. 25
Continued

REPLACEMENT SHEET